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Docket Management Facility
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U. S. Department of Transportation, Room PL-401
400 Seventh Street SW
Washington, D.C. 20590-0001

To Whom It May Concern:

I am the General Counsel of Mercury Marine, which we believe to be the world's largest producer of propulsion systems for recreational and light commercial craft, including many styles of houseboats. Prior to my service over the past nine years as General Counsel, I was a trial attorney in private practice from 1976 to 1987, and was responsible for managing Mercury Marine's national litigation from 1987 to 1992. As a result of my responsibilities, I have extensive experience with "propeller guard" litigation and the testing of devices offered as "propeller guards" both as a product of litigation and outside of the litigation structure. The following comments are offered in opposition to the proposed rulemaking set forth in Volume 66 Number 237 of the Federal Register dated December 10, 2001.

Discussion of Statistics

A fundamental premise behind the Federal Boat Safety Act and the Coast Guard's charge to enact regulations that will promote boating safety is the notion of a statistical demonstration of the need for regulatory action. Available statistics offer no basis for the currently proposed rulemaking. As The Regulatory History of the background and purpose section of the proposed rule states, "while accident data currently available . . . does not show a high number of reported fatalities from propeller strikes annually . . ."

Our review of U. S. Coast Guard statistics demonstrates that for rental houseboats there is one propeller or gearcase related injury and no fatalities in the past five years. (Note, our review of the statistics does not indicate whether this was on a planing houseboat or displacement houseboat.) Over the past ten years, there have been a total of two rental houseboat fatalities and ten injuries. This justifies, I believe, two unassailable conclusions: First, the number of injuries and fatalities on rented houseboats has fallen substantially in the last five years to a level in which it can be legitimately stated that the "problem" is virtually nonexistent; second, the overall statistics fail to make a compelling case that any regulation is necessary for public safety. Only by completely abandoning any notion that safety regulation should follow a statistical demonstration of a substantial risk of injury to the public could the proposed rulemaking be justified.

As a parenthetical comment, I would like to address the oft-repeated shibboleth that Coast Guard statistics fail to accurately convey the extent of recreational boating injuries. I have had the opportunity to review numerous lawsuits over the years, both on behalf of Mercury Marine and some involving marine accidents in which no Mercury Marine product was involved. I cannot recall a single lawsuit in which a formal boating accident report had not been filed and reported in the U. S. Coast Guard statistical database. This includes both fatalities and injuries. Based on this anecdotal but extensive experience, I believe the accuracy of Coast Guard data is incorrectly portrayed as inaccurate by those whose interests would be served by underreporting. I believe my assessment has been repeatedly validated over the years by those who have collected data from sources other than the Coast Guard. The notion that there are significant injuries or even fatalities that go unreported to the Coast Guard is in my opinion an unvalidated supposition completely contradicted by experience.

Foundational Observations

There are at least two assumptions made about "propeller guards" that are essential to the proposition that such a device is the desirable subject of rulemaking: First, that a sufficiently robust device, hydrodynamically sound, that will endure the rigors of shallow water operation without adverse consequences in the event of underwater impact, can be devised; and, second, that such a device will prevent propeller blade injuries and will not be a mechanism of injury in and of itself. I will focus all of my comments on the second point, and will make no effort to address the first, which is best left in the hands of knowledgeable engineers.

Mercury Marine has sponsored or performed more tests on prop shrouds, and their potential for injury, than any other person or entity including the only truly scientific experiments on injury prevention. Included were tests in association with scientists from Biodynamics Research Inc. on whole body anthropomorphic dummies and instrumented head forms; and, in conjunction with scientists from the University of Tennessee and the University of Louisville, cadaver limbs.

I would have the boldness to suggest that no scientific or reliable tests on the injury mechanisms of open props, and more particularly propeller shrouds, have been performed except those sponsored or completed by Mercury Marine.

Discussion

Proponents of propeller shrouds as injury prevention mechanisms have rested their arguments entirely on three elements:

1. passion;

2. the intuitive belief that some sort of shrouding device is better than no shrouding device; and,

3. pseudo-scientific, objectively deficient "experiments" which have been repeatedly demonstrated to lack substantive value.

These may seem like strong statements, but I believe two objective elements confirm this assessment. First, no propeller guard litigation has ever been completed in which there has been a finding that the "scientific" proofs offered by proponents to encourage the adoption of propeller guards formed even a minimally sufficient basis in the law to permit the case to be decided by a jury. Even on those rare occasions where juries have found that propeller guards should have been adopted, Courts of Appeal have ruled that the evidence that "guards" would prevent injury adduced by proponents is so inadequate that the juries' verdicts cannot be sustained.

Further verifying this assessment is the recognition that ten to fifteen years ago, proponents of propeller guards, recognizing the hydrodynamic and structural inadequacies of cage-type devices, were advocating the adoption of ring-type "guards" as the desirable device. Ring-type devices were subsequently demonstrated to be so inadequate from both hydrodynamic performance and injury prevention perspectives that they have been largely abandoned by former proponents, reverting once again to cage-type devices or hybrids of rings and cages which tend to offer only the inadequacies of both. This historical evolution, or perhaps devolution, demonstrates the bankruptcy of the notion.

A foundational principal behind any rulemaking ostensibly intended to require a device intended to prevent injuries should be to first, do no harm. The present proposed rulemaking is fundamentally unsound in that, other than the belief generated by passion or the intuitive leap of faith that something is better than nothing, there is literally no scientific proof or demonstration that propeller shrouds are an inherently safer device on even slow moving, displacement type vessels than an open propeller. None.

Indeed, in my opinion, it is misleading to describe currently proffered devices as "propeller guards". I believe that while that term has become accepted in the vernacular, they should in fact be simply referred to as propeller shrouds. As devices intended to protect the propeller under some circumstances, there may be "guards" which under extremely limited types of use have validity. However, there is again no scientific or experimental verification that any of these devices offer protection from injury other than an intuitive leap of faith.

Over the past two decades, Mercury Marine's tests have demonstrated certain conclusions uncontradicted by any other testing or experimentation of the qualitative nature we have sponsored or performed;

(a) propeller shrouds significantly increase the area of dangerous exposure (acknowledged in prior U.S. Coast Guard studies);

(b) propeller shrouding devices are themselves mechanisms of injury, controverting the fundamental premise of first doing no harm;

(c) the particular profile of any proffered shroud gives rise to an increased risk of entrapment in the device itself, a nearly non-existent risk with open propellers;

(d) tests at relatively low speed demonstrate that the human body is inclined to "engage" with the shroud, preventing the body (in contradiction to frequent assumptions) from bouncing off the device (likely due to the principal of added mass);

(e) there is real potential, even if one assumes blade injuries will be avoided by shrouding devices (which assumption depends entirely on the characteristics of any particular device and the uniqueness of the way the swimmer's body comes into contact with the device), to simply substitute drownings for wounds. Even at low speeds, contact with a shrouding device might sufficiently incapacitate a swimmer such that a fatality replaces an injury.

I would again observe, critically crippling the proposed rulemaking is the reality that there is no available testing or experimentation of scientific quality that suggests that proposed propeller shrouds will in fact improve public safety and will not act in and of themselves as devices for injury. The emperor has no clothes.

Conclusion

In conclusion, I believe the proposed rulemaking insofar as it contemplates propeller shrouding devices as injury prevention interventions is profoundly flawed. It is unworthy of an arm of government the efforts of which have resulted in persistent, objective, long-term, and substantial injury and fatality reduction over the last thirty years. Not only is there no statistical justification for the proposed rulemaking, there is no empirical substantiation for the proposition that propeller shrouding devices will be effective injury reduction mechanisms in the form of scientifically reliable testing or experimentation.

Sincerely,

Joseph H. Pomeroy
General Counsel

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